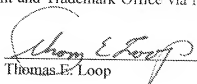


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June 23, 2006
Date


Thomas E. Loop

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.: 10/557,758

Confirmation No.: 1471

First Named Inventor: Gregory Branch

Filing Date: April 13, 2005

Title: MANUFACTURE OF FULLY RECYCABLE FOAMED
POLYMER FROM RECYCLED MATERIAL

Atty. Docket No.: 110120.402

PETITION TO MAKE SPECIAL

This is a petition to have the above-identified application accorded "special" status under 37 CFR 1.102(c). This petition is based on the grounds that the invention will materially enhance the quality of the environment of mankind by contributing to the restoration or maintenance of the basic life sustaining natural elements, i.e., air, water, and soil. This petition is being accompanied by the following statement under 37 CFR 1.102 explaining how the materiality standard is met.

The present invention is directed to a novel process for making shaped articles of manufacture such as, for example, foamed coffee cups and food packaging trays, from a sheet or roll of a thermoplastic material, wherein the thermoplastic material consists essentially of a virgin thermoplastic material admixed with a previously processed thermoplastic material (i.e., recycled plastic), wherein the virgin material and the recycled plastic are of the same chemical composition, and wherein the recycled plastic content is in an amount that ranges from about 5% to about 100% by weight of the

thermoplastic material. The inventive process involves exposing the virgin/recycled plastic mixture to a benign gas such as carbon dioxide (CO_2) or nitrogen (N_2) under an elevated pressure for an extended period of time such that the virgin/recycled plastic mixture becomes "gas impregnated." By suddenly reducing the pressure and optionally heating the gas impregnated virgin/recycled plastic mixture; a greatly expanded microcellular foamed structure is formed as a result of the gas being driven from solution and into a multiplicity of micro gas bubbles. The inventive process applies to most common types of thermoplastic polymers including PET (polyethylene terephthalate), PS (polystyrene), ABS (acrylonitrile butadiene styrene), PVC (polyvinyl chloride), polycarbonate, acrylic, biopolymers (PLA), as well as other specialty polymers. The inventive process enables deep-draw thermoforming of expanded thermoplastics with void fractions of greater than 80%. Importantly, the inventive process can produce a wide range of foamed products with up to 100% recycled plastic and up to 60% post-consumer content. Moreover, and because the inventive process does not chemically change the thermoplastic material, trimmings and related scrap associated with the thermoforming process can be reused in an essentially closed-loop recycling process.

As is appreciated by those skilled in the art, most conventional thermoforming processes use volatile organic compounds (VOCs) as the foaming agent. It is known that VOCs are harmful to the protective ozone layer of the Earth's atmosphere. In contrast to conventional thermoforming processes, the process of the present invention uses only benign gases such as carbon dioxide (CO_2) and nitrogen (N_2) for making shaped articles of manufacture. In many instances, the process of the present invention can be used in lieu of a conventional thermoforming process that uses a VOC. Indeed, conventional thermoforming equipment can be, and are currently being, reconfigured and retro-fitted to accommodate the process of the present invention. As a result, the inventive process contributes to the restoration or maintenance of mankind's air, a basic life sustaining natural element, by significantly reducing the amount of VOCs emitted into the atmosphere. In addition, and because the inventive process can produce a wide range of foamed products with up to 100% recycled plastic and up to 60% post-consumer content, the inventive process also contributes to the restoration or maintenance of mankind's soil,

another basic life sustaining natural element, by significantly reducing the amount of thermoplastic material discarded into to landfills and the environment. For example, and in accordance with the process of the present invention, the plastic found in a common 20 ounce soda bottle is enough material to make seven 12 ounce coffee cups.

In view of the foregoing, applicant respectfully request that this petition to make special be granted.

Respectfully submitted,

A handwritten signature in dark ink, appearing to read "Thomas E. Loop", is written over a horizontal line.

Thomas E. Loop
Registration No. 42,810